REMARKS

Claims 1-11 constitute the pending claims in the present application. Claims 1, 6, 7, 9, and 11 have been amended. Claims 12-17 are new. Claim 3 was withdrawn from consideration. Claim 4 and 10 are canceled. Furthermore, new generic claims 12-17 are readable upon the elected species of Figures 1-3 and 6.

Applicant note with appreciation the Examiner's conclusion that claim 7 is allowed.

Additionally, Applicant respectfully reminds the Examiner that if a generic claim is found to be allowable, Applicant is entitled to consideration of the additional species of the allowed generic claim as provided by 37 C.F.R. § 1.146.

No new subject matter has been added, and amended and new claims should not necessitate an additional search. Support for the amended and new claims can be found in the application and claims as originally filed.

The issues raised by the Examiner in the Office Action are addressed below in the order they appear in the prior Action.

The Drawings Comply with 37 CFR 1.84(p)(5)

The Examiner objects to the drawings as failing to comply with 37 CFR 1.84(p)(5) because reference character "10" as shown in the drawing filed on January 26, 2007 is not mentioned in the description. Applicant has amended Figure 1A and 1B to remove the reference character "10".

The Examiner objects to the drawings as failing to comply with 37 CFR 1.84(p)(4) because reference character "2" has been used to designate both spring pin without an extension as shown in Figure 1A and 1B and a spring pin with an extension (Fig. 5).

Applicant has amended Figure 5 such that the internal spring pin with an extension reference character "2" has been changed to reference character "16". In addition, Applicant has amended the specification Figure 5 reference character "2" to reference character "16".

The Examiner objects to the drawings because the black shading in component 10 in Figures 1A, 1B, 3, 8, and 14 is not permitted per 37 CFR 1.84(m). Applicant has amended the cross-sectional views of Figures 1A, 1B, 3, 8, 14, and additionally Figures 5, 10 and 11 such that component 10 is hatched.

Applicant believes the foregoing amendments obviate the Examiner's rejections of the drawings under 37 CFR 1.84. Accordingly, reconsideration and withdrawal of the objections to the drawings is respectfully requested.

Specification

The disclosure is objected to because of the following informalities: on the paragraph bridging pages 4 and 5, the description of reference character "8" has been described as an "Internal Spring Trigger" and "trigger pin". Applicant has amended the specification to consistently reference character "8" as an "Internal Spring Trigger".

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. The Examiner has requested that "one or more ball bearing or slugs located in the main structure and within an internal geometry of the trap" be recited in the specification. Applicant has amended the specification to include reference to one or more ball bearing or slugs "located in the main structure and within an internal geometry of the trap". No new matter is introduced.

Applicant believes the amendments to the specification overcome these objections. Accordingly, reconsideration and withdrawal of the objections to the specification is respectfully requested.

Claims

Applicant thanks the Examiner for pointing out informalities in the claims. Applicant has accordingly amended the claims as detailed below.

Claims 1, 6, 7, 9, and 11 have been amended to insert "being adapted" after "trigger" in claim 1, line 8, claim 6, line 10, claim 7, line 7, and claims 9 and 11, line 8.

Claims 1, 6, 7, and 11 have been amended to recite "application of a low force" instead of "the application of the low force" in claim 1, line 11, claim 6, line 13, and claims 7 and 11, line 11.

Claim 9 has been amended to recite "a string" instead of "the string" in line 11.

Claim 11 has been amended to insert "the" before "one" in line 9.

Accordingly, reconsideration and withdrawal of the objections to the claims is respectfully requested.

The Claims Comply with 35 U.S.C. § 112

Rejection of Claim 10 under 35 U.S.C. § 112, first paragraph

Claims 1, 2, 5, 6, 8, 9, and 11 are rejected under 35 U.S.C. 112, first paragraph, as being based on a disclosure which is not enabling. Applicant traverses this rejection.

The Examiner contends that the lift spring 4 is critical or essential to the practice of the invention, but not included by the claim(s) is not enabled. Applicant points out that when the mechanism is inverted a lift spring 4 is not used to move the internal spring pin 2 and therefore not critical or essential to the practice of the invention as the Examiner contends. In an inverted orientation, when trigger 8 is removed the internal spring pin 2 is freed and moved by the force of gravity thus removing the release pin 7 between the ball bearings 6. Examples of when the mechanism might be employed in

such an inverted orientation are a net (page 1, line 14) filled with helium balloons, tethered (page 8, line 30) to a weather balloon or dirigible, or attached to a parachute (page 1, line 14). In these examples, when trigger 8 is removed the internal spring pin 2 is freed and moved by the force of gravity thus removing the release pin 7 between the ball bearings 6 and releasing the attachments to the netting, tethers, or suspension lines.

Additionally, Applicant points out that the impulse release mechanism (Figure 9) does not have a lift spring 4. The impulse release mechanism (Figure 9) (illustrated in an upright position) releases when an impulse/impact provides the means to create an inertial force to move the internal spring pin 2 thus removing the release pin 7 between the ball bearings 6. Furthermore, lift spring 4 is not critical or essential on the solenoid actuated release (Figure 11) and hydraulic release (Figure 8), with the solenoid moving the internal spring pin in first and the evacuation of the gas or fluid in the latter. Also, an impulse/impact, solenoid, barometric or pressure (page 8 line 25), magnet, or electromagnet could be used to move the internal spring pin.

Accordingly, reconsideration and withdrawal of the §112 rejection is respectfully requested.

The Claims Comply with 35 U.S.C. § 102

Rejection of Claims under 35 U.S.C. §102(b) (Bemis U.S. Patent No. 3,066,632)

Claim 1, 2, 5, 6, 9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bemis, (U.S. Patent No. 3,066,632). Applicant traverses this rejection to the extent it is maintained over the claims as amended.

Claim 1 recites a low-force release mechanism comprising: a main structure; a trap; a moveable internal spring pin with an internal spring to eliminate ordinal locking of the trap; a release pin; at least one trigger; and attachments by which a container is attached to said main structure and said trap, wherein the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs located in the main structure and within an internal geometry of the trap, such that the position of said trap is locked and held; a load force is distributed to the main structure and to the trap away

from the release pin; the trigger being adapted to permit application of a low force to move the release pin; and the one or more ball bearings or slugs interact with the internal geometry of the trap, wherein the one or more ball bearings or slugs retract upon removal of the release pin such that application of a low force on the trigger causes the internal spring pin and the release pin to move a position of the container.

Bemis discloses a device whereby the release pin 54 is configured to be moveable to effect the position of one or more ball bearings 55 that are located in the main structure 110 and within the internal geometry of the internal spring pin 51 unlike the pending claim that states "the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs located in the main structure and within an internal geometry of the trap". Furthermore, the ball bearings 57 referenced by the Examiner require the removal of the internal spring pin 51 to retract not the release pin 54. Also, the Bemis internal spring 116 is used to move the internal spring pin 51 from between ball bearings 57 unlike the internal spring 3 of the pending claim that is used "to eliminate ordinal locking of the trap". Additionally, what the Examiner characterizes as attachments 125 are ball bearings and not attached to container T. Bemis ball bearings 125 must not be attached to plug member 115 in order to separate and release the plug member 115 and container T when the trap 113 is moved to an unlock position. Also, the plug member 115 is held by the ball bearings 125 not the main structure 110 and the trap 113 unlike the pending claim. Additionally, the plug member 115 which is the point of attachment for container T does not distribute the load force to the main structure and to the trap but instead transfer the load force to the ball bearings 125 unlike the pending claim. Furthermore, Bemis discloses a device that does not release upon the removal of a release pin 54 unlike the device of the pending claim. Bemis claim 1 states "...an inertia actuated weight adapted to move to an unlocked position to release the parachute from the load upon rapid deceleration of the latter". The Bemis specification states in column 2 line 67 "When piston 50 moves upwardly to a position to permit inward movement of balls 57 the device is then in condition for release upon water entry of the torpedo..." In fact the Bemis device includes a spring 114 that prevent the movement of the trap (weight) 113 when the release pin 54 is removed. Neither the release pin 54 nor the

internal spring pin 51 which is the stem of piston 50 on the Bemis device will release the container (torpedo) T without the external inertial force being applied in the appropriate axis to cause the trap "weight 113" to overcome the force of spring 114 and move to an unlock/release position. Furthermore, when trap 113 is in the lock position the ball bearings 125 can *not* move outward thus freeing plug member 115 and container T. Also, the plug member 115 must be attached for the internal spring 116 to exert a force on the internal spring pin 51.

Claims 2 and 5 are dependent on claim 1. As discussed above, claim 1 is not anticipated by Bemis. Because a dependent clam incorporates every element of the independent claim from which it depends, the respective dependent claims of claim are thus not anticipated by Bemis. Accordingly, Applicant submits that Bemis does not anticipate the pending claims.

Claim 6 recites a low-force release mechanism comprising: a main structure; a trap; a moveable internal spring pin with an internal spring to eliminate ordinal locking of the trap; a release pin; a movable hanger through which force can be applied to move the position of the internal spring pin or receive force applied by the main structure as a point of external attachment; at least one trigger; and attachments by which a container is attached to said main structure and said trap, wherein the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs located in the main structure and within an internal geometry of the trap, such that the position of said trap is locked and held; a load force is distributed to the main structure and to the trap away from the release pin; the trigger being adapted to permit application of a low force to move the release pin; and the one or more ball bearings or slugs interact with the internal geometry of the trap, wherein the one or more ball bearings or slugs retract upon removal of the release pin such that application of a low force on the trigger causes the internal spring pin and the release pin to move a position of the container.

Bemis as discussed above in claim 1. Additionally, Bemis does not disclose a movable hanger through which force can be applied to move the position of the internal

spring pin 51 or receive force applied by the main structure as a point of external attachment unlike the pending claim.

Claim 9 recites a low-force release mechanism comprising: a main structure; a trap; a moveable internal spring pin with an internal spring to eliminate ordinal locking of the trap; a release pin; at least one trigger; and attachments by which a container is attached to said main structure and said trap, wherein the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs located in the main structure and within an internal geometry of the trap, such that the position of said trap is locked and held; a load force is distributed to the main structure and to the trap away from the release pin; the trigger being adapted to permit application of a low force to move the release pin; and the one or more ball bearings or slugs interact with the internal geometry of the trap, wherein the one or more ball bearings or slugs retract upon removal of the release pin such that a user pulling on a string attached to the trigger causes the internal spring pin and the release pin to move a position of the container , such that the container collapses releasing its contents.

Bemis as discussed above in claim 1. Additionally, Bemis does not disclose a string attached to the trigger that causes the internal spring pin and the release pin to move a position of the container, such that the container collapses releasing its contents. The container (torpedo) T does not collapse upon or due to its release from the Bemis device.

Claim 11 recites a low-force release mechanism comprising: a main structure; a trap; a moveable internal spring pin with an internal spring to eliminate ordinal locking of the trap; a release pin; at least one trigger; and attachments by which a container is attached to said main structure and said trap, wherein the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs located in the main structure and within an internal geometry of the trap, such that the position of said trap is locked and held; a load force is distributed to the main structure and to the trap away from the release pin; the trigger being adapted to permit application of a low force to move the release pin; and a trap spring and the one or more ball bearings or slugs interact

with the geometry of the trap, wherein the one or more ball bearings or slugs retract upon removal of the release pin such that application of a low force on the trigger causes the internal spring pin and the release pin to move a position of the container.

Bemis as discussed above in claim 1. Bemis discloses a trap spring 114 which prevents the movement of the trap (weight) 113 when the release pin 54 is removed. Neither the release pin 54 nor the internal spring pin 51 which is the stem of piston 50 on the Bemis device will release the container (torpedo) T without the external inertial force being applied in the appropriate axis to cause the trap "weight 113" to overcome the force of spring 114 and move to a unlock/release position. Furthermore, when trap 113 is held in the lock position by spring 114 the ball bearings 125 can *not* move outward thus freeing plug member 115 and container T.

Accordingly, Bemis does not teach or suggest all the elements of the pending claims. For the foregoing reasons, Applicant believes that the reference cited by the Examiner does not anticipate the pending claims. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

The Claims Comply with 35 U.S.C. §103

Rejection of Claims under 35 U.S.C. §103(a) (Bemis, U.S. Patent No. 3,066,632)

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatenable over Bemis, 3,066,632. Applicant traverses this rejection to the extent it is maintained over the claims as amended.

The Examiner's attention is drawn to MPEP § 706.02(j), which sets forth that a teaching or suggestion provided by the prior art reference (or references when combined) of all the claimed limitations is necessary to establish a *prima facie* case of obviousness. The following comments address this requirement of a rejection under 35 U.S.C. § 103(a).

Bemis as discussed above. Additionally, Bemis use of impact upon water entry to release a torpedo (column 2, line 69) would not motivate a skilled artisan to select the Bemis mechanism which requires a sudden and external force to release for the purpose

of intact delivery of food aid or other emergency supplies via a bag, a box, a collapsible box, or a net. Also, the use of such containers could create a cushioning or dampening of external forces required for the operation and release of the Bemis mechanism.

For the foregoing reasons, Applicant believes that the references cited by the Examiner do not render the claimed subject matter *prima facie* obvious under 35 U.S.C § 103(a). Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Rejection of Claims under 35 U.S.C. §103(a) (De Pew, U.S. Patent No. 3,065,011 in view of Huff, U.S. Patent No. 1,027,481)

Claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over De Pew (U.S. Patent No. 3,065,011) in view of Huff (U.S. Patent No. 1,027,481). Applicant traverses this rejection to the extent it is maintained over the claims as amended.

Claim 9 recites a low-force release mechanism comprising: a main structure; a trap; a moveable internal spring pin with an internal spring to eliminate ordinal locking of the trap; a release pin; at least one trigger; and attachments by which a container is attached to said main structure and said trap, wherein the release pin is configured to be moveable to effect the position of one or more ball bearings or slugs *located in the main structure and within an internal geometry of the trap*, such that the position of said trap is locked and held; a load force is distributed to the main structure and to the trap away from the release pin; the trigger being adapted to permit application of a low force to move the release pin; and the one or more ball bearings or slugs interact with the internal geometry of the trap, wherein the one or more ball bearings or slugs retract upon removal of the release pin such that a user pulling on a string attached to the trigger causes the internal spring pin and the release pin to move a position of the container , such that the container collapses releasing its contents.

De Pew discloses a device with two sets of ball bearings 21 and 36 (Figure 1). In neither instance, however, are the ball bearings *located in the main structure and within the internal geometry of the trap*, as recited in the pending claims. Contrary to the ball

bearings or slugs recited in the pending claims, the ball bearings 36 are located in the main structure but *external* to the trap 11 and do not lock and hold a position of the trap. Also, contrary to the ball bearings or slugs recited in the pending claims, the ball bearings 36 *retract* in the locking position (see e.g., column 2, line 46-50). And unlike the ball bearings recited in the pending claims, the ball bearings 21 are located *external* to the main structure 10 and do not interact with the main structure to lock and hold a position of the trap 11. Furthermore, the Examiner contends that attachments A15 (single attachment with a hole through which the trap 11 is inserted) are attached to the main structure 10 and the trap 11. Attachment A15 does not make contact with the main structure 10 unlike the attachments recited in the pending claims that attach to the main structure and the trap. Furthermore, the Examiner contends that "A load force (the spring 31 applies this load force) is distributed away from the trigger." (spring 31 should read spring 30 in that 31 refers to a shoulder inside trap 11 (column 2, line 26)). The pending claims recite a load force is distributed *to the main structure and to the trap* away from the release pin and does not claim distribution away from the trigger. Furthermore, the spring 30 located inside the shoulder 31 of the trap 11 and coiled around the release pin 20 does not apply a load force but is used on De Pew's device to prevent unintended movement of the release pin 20 while in the locked state (reference Figure 1).

De Pew is discussed above. Huff discloses the attachment of a cable from a part of the releasing means of a hook (column 2, lines 83-89). Huff does not teach or suggest the attachment of a string to a low-force release mechanism as recited in claim 9.

Huff does not overcome the deficiencies of De Pew discussed above. Accordingly, neither De Pew nor Huff, either alone or in combination, teach or suggest all the elements of the pending claims.

For the foregoing reasons, Applicant believes that the references cited by the Examiner do not render the claimed subject matter *prima facie* obvious under 35 U.S.C § 103(a). Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, I respectfully requests reconsideration and withdrawal of the pending rejections. I believe that the pending claims are in condition for allowance and favorable reconsideration is respectfully solicited.

Respectfully submitted,

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